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DDI-133-68

The Honorable Paul C. Warnke
Assistant Secretary
International Security Affairs
Department of Defense
Washington, D.C. 20301

Dear Paul:

I appreciated the opportunity to read the IDA appraisal of the bombing of North Vietnam. As you undoubtedly noted, IDA's findings are remarkably similar to those in our own assessments of the Rolling Thunder program.

The IDA approach to effects analysis is essentially the same as that used in this Agency, and I have noted no significant differences in the key statistics used by either of us. The unique aspect of the IDA report is its examination of alternate interdiction campaigns, particularly the postulation of campaigns against only one element of the transportation system in order to determine maximum achievable results. I have asked members of my staff to give these analyses a careful review to see if they can benefit our own research on the Rolling Thunder program.

Sincerely,

Richard Helms
Director

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DD/OER [] 17 Jan 68)
Concur:

R. J. SMITH

TS No. 192882

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*No reply necessary
per C. Enright, O/DCT*

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23 October 1967

MEMORANDUM FOR: Director of Central Intelligence

SUBJECT : CIA Support for IDA Appraisal of US Bombing
Programs Against North Vietnam

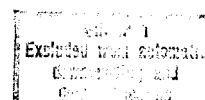
1. This memorandum presents the results of my review of the IDA request for data from CIA for use in IDA's evaluation of the Rolling Thunder program. Most of the material requested falls under the military intelligence production/ ^{responsibilities} of DIA and is the kind of research they have been carrying out for years. In a few instances, CIA has a primary production responsibility or could make a unique contribution.

2. With your concurrence I propose to inform IDA that our participation in the project will be as specified below, that is, limited to those cases where we carry the burden of ^{the} intelligence community's research or have particular expertise.

3. IDA Questions Relating to the NVN Logistics System

a. Railroads, Highways, Inland Waterways -- This series of questions relates principally to the capacities and maintenance of NVN transport systems and the ability of these systems to support military operations. These are areas in which DIA has primary production responsibilities. CIA estimates economic traffic moved on each of these

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systems and would cooperate with DIA in answering the questions relating to traffic flows.

b. IDA General

(1) NVN AAA consumption rates -- DIA and CIA have recently produced an agreed estimate on this subject that can serve as the basis of a DIA response to this question.

(2) Civilian and military supply requirements -- CIA has produced estimates of the essential civilian war supporting supply requirements in Route Packages 1, 2, and 3, and could make these available to DIA to be added to DIA estimates of military requirements.

4. IDA Questions Relating to Effects of Bombing NVN

a. VC/NVA Operations in SVN -- The data relevant to these questions are maintained by the Office of Computer Services of the Department of Defense and are used by all intelligence agencies. These data could be furnished directly to IDA by DOD. The questions relating to trends and changes in VC/NVA military operations are answerable by DIA.

b. Flow of Men and Materiel from NVN to SVN -- These questions can be answered by DIA. The estimates are generally agreed to throughout the intelligence community.

c. Bombing Pauses -- DOD's Office of Computer Services and previous DIA studies of supply movements during bombing

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pauses form an adequate base to answer these questions.

CIA has nothing unique to contribute.

d. Costs of Bombing to NVN -- These questions relate to the capital and manpower costs and the effects on industrial and agricultural production and trade of the bombing program. They fall within CIA's primary production responsibilities for economic intelligence. We propose to respond to all of these questions, except that the response on the significance of remaining industrial and manufacturing facilities would be a generalized statement rather than the development of detailed target systems.

e. NVN's Will to Continue the War -- These questions relate to extremely complex and highly speculative issues. They do not lend themselves to quantitative analysis and reporting, and I would prefer not to respond to these questions.

R. J. SMITH
Deputy Director for Intelligence

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R. J. SMITH
Deputy Director for Intelligence

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QUESTIONS RELATING TO THE NVN LOGISTICS SYSTEM

Railroads:

1. For the Hanoi-Dong Dang; for the Hanoi-Lao Cai; and for the Hanoi-Thanh Hoa lines:
 - a. What is the present flow in boxcars/day and tons/day?
 - b. What is its operational capacity?
 - c. What is the full-time and part-time manpower allocation for operation? Maintenance? New construction? Construction of bypass bridges, ferries, and approaches? Repair and restoration (preferably in men per company and companies per mile)? AAA defense?
2. What is the definition of part-time labor used in manpower estimates?
3. What are typical operational capacities for rail ferries?
4. What is the degree of uncertainty in capacity estimates (25%, 100%), and to what extent can capacity be permanently exceeded by an extensive labor commitment?
5. What are typical repair time, man-hour, and material requirements for rail cuts, small bridge replacements, major bridge replacements, ferrying, building of bypass bridges, ferries, approaches?
6. What part-time and full-time labor could be made available for rail operations on each line to handle more traffic or to compensate for damage from more intensive attacks?
7. To what extent does shuttling occur, and how much time is required to transship supplies around cuts?
8. Where are the major transshipment points from RR to highways and waterways?
9. To what extent do present rail operations depend on yards and maintenance facilities in NVN on the Chinese border?

Highways:

1. What is the full-time and part-time manpower allocation by Route Package for
 - a. Truck fleet operation?
 - b. Support functions (such as truck parks, supply depots, storage facilities, security)?

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- c. New road construction?
 - d. Construction of bypass roads, bridges, ferries, approaches?
 - e. Road maintenance (in companies per mile and men per company)?
 - f. Road repair and restoration (in companies/mile and men/company)?
2. What is the military truck inventory, by Route Package or Military Region? What is the civilian inventory potentially available? What is the truck import rate?
3. What are the major roads in use and what is the flow rate for each of the roads?
4. What are typical repair time, man-hour, and material requirements for highway cuts, small bridge replacements, major bridge replacements, bypassing, ferry and ford construction?

Waterways:

For north of 20° and for south of 20°.

- 1. What are the inventories of (a) sampans, (b) junks, (c) lighters, (d) barges in the region? What are importation and construction rates? What are typical loads, speeds, and crew sizes?
- 2. What is the full-time and part-time (define this) allocation of manpower to (a) fleet operation, (b) operation and maintenance of waterways (preferably in men/mile and miles), (c) cargo-handling, (d) equipment construction?
- 3. What are turn-around times and transshipment points to or from other transport modes? What storage and unloading facilities are available?
- 4. What is reserve capacity of the system to handle more traffic if truck and rail traffic were greatly reduced or if the Haiphong port was closed? What suffers from such a fleet diversion?

General:

- 1. What is the estimated NVN AAA ammunition consumption rate?
- 2. What are the estimated civilian and military supply requirements in Route Package 1, Route Package 2, and Route Package 3? What are the supply requirements for the DMZ and for Lacs?

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QUESTIONS RELATING TO EFFECTS OF BOMBING NVN

VC/NVA Operations in SVN:

1. What significant trends or changes have occurred since the beginning of 1964 in:
 - a. The size and composition of VC/NVA military forces?
 - b. The scale and rate of combat of VC/NVA military forces?
 - c. The percentage of total combat engagements initiated by the VC/NVA military forces vs. those initiated by US/ARVN/Allied forces?
2. What factors should be considered in assessing and explaining the trends or changes noted in 1a, b, and c above? For example, how much importance should be assigned to the following:
 - a. Problems of VC/NVA external supply;
 - b. Problems of VC internal recruitment;
 - c. Military support capabilities of the VC infrastructure in SVN;
 - d. VC/NVA strategic plans and decisions regarding type, scale, rate, and timing of combat;
 - e. VC/NVA casualties and losses (deaths, injuries, disease, desertion) (1) inside SVN; and (2) during infiltration from NVN to SVN;
 - f. Limitations on their ability to move men and supplies within SVN;
 - g. The size, location, and combat operations of US/ARVN/Allied forces?

Flow of Men and Materiel from NVN to SVN:

1. Have the Rolling Thunder air strikes placed a "cap" or "ceiling":
 - a. On the capability of NVN to infiltrate VC/NVA personnel into SVN?
 - b. On the capability of NVN to infiltrate materiel and supplies into SVN?

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2. In what sense has a ceiling been imposed? What are the personnel and supply ceilings now as compared with February 1965?

Bombing Pauses:

1. Have the various past bombing pauses produced any relatively long-lasting changes in:

- a. The frequency of VC/NVA initiated combat operations?
- b. The scale or size of such operations?
- c. The numbers of US/ARVN/Allied casualties and the VC/NVA vs. Allied force casualty ratio?

2. Assuming an increase in the flow of men and supplies during the various past bombing pauses:

- a. To what extent did this increase represent a re-scheduling of previously planned levels, rather than an actual increase in the total numbers or amounts?
- b. To what extent was the observed increase a result of reversion to more openly visible methods and techniques of transport and movement?

Costs of Bombing to NVN:

1. What are the implications of the estimated diversion of NVN manpower to reconstruction, repair, and defense activities resulting from the bombing program?

- a. From what sources in the labor force has the diverted manpower been drawn?
- b. What is the composition of the part-time labor force in this manpower diversion and to what extent has it been drawn from underemployed manpower?
- c. How does the number of people diverted for reconstruction; repair and defense activities compare with the number of people freed from industries that have been bombed out?
- d. To what extent has the diversion of manpower affected living standards and/or import requirements? In what kinds of goods?
- e. To what extent are NVN's manpower resources sufficient simultaneously to operate its economy, to continue to support the war in SVN, and to maintain its defenses at current or increased levels?

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2. What are the implications of the destruction of NVN industrial and manufacturing facilities?

- a. What did such facilities contribute to the GNP? The standard of living? Foreign exchange?
- b. To what extent is NVN compensating for the destruction by increased imports? Conversion to small-scale production? Relocation and dispersal of industrial facilities? Reductions in living standards?
- c. How much restoration/reconstruction is being deferred? How much foreign aid would be required to restore the facilities to pre-war standards, and how long would it take?
- d. What are the remaining targeted industrial and manufacturing facilities, and what is their significance to the NVN economy, and the war effort?

3. What are the implications of the estimated drop in agricultural production?

- a. To what extent are drops in agricultural output due to diversion of manpower because of the bombing and to what extent are they due to unfavorable weather or other causes?
- b. To what extent can NVN compensate for reduced agricultural labor by increased use of fertilizer and/or equipment?
- c. Has NVN attempted to meet agricultural deficits by proportional increases in imports of food?
- d. To what extent do increased food imports represent an attempt to stockpile in anticipation of future contingencies rather than to meet current requirements?
- e. Have there been any overall changes in living standards due to drops in agricultural output?

4. How has the bombing program affected the Soviet, Chinese, and East European Communist aid and trade programs with NVN?

- a. Do current economic aid and trade programs represent any radical departures from past practice?
- b. To what extent is current aid given in grant form and to what extent in repayable loans?
- c. How does the volume of aid to NVN compare with the overall aid programs of the donors?

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- d. To what extent and in what respects does the military and economic aid furnished to NVN draw upon goods in short supply?

NVN's Will to Continue the War:

1. What effects has the bombing had on NVN's leaders? What discernible trends are there:
 - a. In weakening or hardening their will to persist in the war?
 - b. In plans and activities which indicate optimism or pessimism about the ability of NVN to continue the war for an indefinite period and achieve ultimate victory for their side?
 - c. In their military strategy for continuing the war in SVN (e.g., have they deferred or rejected the notion of sustained large-scale conventional battles in SVN)?
 - d. In the degree of unity/disunity, solidarity/factionalism among members of the NVN Politburo?
2. In what ways, and to what degree, is the NVN leadership sensitive to the morale and support of the populace?
3. What effects have the air strikes had on public morale and the willingness of the populace to support the NVN leadership? What discernible trends are there:
 - a. In national unity and willingness to cooperate with government programs, instructions and directives?
 - b. In their willingness to accept heavy casualty rates among military forces in SVN?
 - c. In their reactions to evacuation and family separation?
 - d. In their reactions to damage, civilian casualties, food and other consumer goods shortages, disruption of economy, and public services?
 - e. In their reactions to labor conscription for civil defense, LOC repair and maintenance, etc.?
4. Is there any evidence that the bombing has affected the loyalty and morale of the armed forces? The government bureaucracy? Youth? Any other key groups in the country?

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S E N S I T I V E

ANALYSIS OF THE BOMBING OF NORTH VIETNAM

1. Assuming that the bombing of the North has had as its objectives one or more of the following:
 - a) To reduce the flow of men and materiel from North to South.
 - b) To increase the cost to NVN of maintaining the flow of men and materiel to the South.
 - c) To weaken the will of the North to continue the conflict in the South.

How well has the program accomplished its objectives to date?

- II. Examine alternative future bombing programs the objectives of which are to reduce the flow of men and materiel from North to South. Assume a fixed number of attack sorties per month -- e.g., 12,000 with two tons per sortie.
 - a) Consider at least the following alternatives:
 1. No bombing north of 20°
 2. No bombing south of 20°
 3. Concentration of bombing south of 20° with some bombing north of 20° aimed at specific targets to be specified.
- III. Considering the map of North Vietnam and the actual and potential modes of transport, state the general parameters and their inter-relationship of an optimum pattern of attack intended to reduce the flow of men and materiel to South Vietnam and the DMZ.

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Data Related to NVN Economy and Costs of U.S. Air Strikes

Background data on NVN manpower, industry, agriculture, and exports and imports.

Effects of present diversion of manpower from agriculture; and future manpower capabilities to supply civilian and military needs.

Damage to industrial facilities and costs to rebuild.

Trends in relocation of industry and extent of conversion to small-scale manufacturing and handicraft industries.

Trends in agricultural production, food stockpiling, and food rationing.

Imports by type, source, amount, and mode of transport.

Nature of current aid and assistance agreements with Communist Countries.

Data Related to Will of NVN to Continue the War

Estimates of present and future military and political strategy of NVN leadership.

Estimates of present and future vulnerability/invulnerability of NVN Poliburo to internal dissension and factionalism.

Extent to which current strategy, plans, and operations indicate optimism or pessimism of leadership.

Sensitivity of leadership to public morale and support of the populace.

Effects of evacuation and family separation on public morale and support of the government.

Trend and indicator data on:

- (a) Public propaganda, patriotic campaigns, public exhortations for support of the war, etc.;
- (b) Public satisfaction/dissatisfaction with course of the war;
- (c) Public capability to sustain high levels of military casualties in NVN;
- (d) Public reactions to damage, civilian casualties, disruption of economy and public services, etc.

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Data Related to VC/NVA Operations in SVN

Fluctuations in level and intensity of combat.

Estimates of VC/NVA casualties.

Levels of VC/NVA supply.

Factors affecting the rate and scale of combat operations.

VC/NVA strategic plans and decisions.

Military effects in SVN of bombing pauses.

Data Related to Infiltration of Personnel into SVN

Estimates of force size.

Estimates of infiltration rates.

Effect of bombing pauses on infiltration.

Loss rates during infiltration.

Factors limiting infiltration rates.

Infiltration plans and decisions.

Data Related to Flow of Supplies into SVN

Estimates of supply requirements in SVN.

Sources of supply for VC/NVA forces in SVN.

Factors limiting possible rates of supply.

Transport capabilities for maintaining the flow of supplies;
effects of bombing on such capabilities.

Effect of bombing pauses on supply movement.

NVN importation requirements.

NVN stockpiling practices.

TOPICAL OUTLINE

- I. TRANSPORTATION SYSTEM
Operation of Rail, Truck, Waterway, Coastal Shipping,
Port Elements.
Manpower Requirements.
Effects of Bombing Program.
Countermeasures to Bombing Program.
Inventory of Carriers.
Repair Times.
- II. MOVEMENT OF SUPPLIES
Imports by Rail, Sea.
Internal Movements and Requirements.
Exports to DMZ, Laos, DRV Panhandle.
Estimated requirements by DMZ and in SVN.
- III. MANPOWER
Manpower Allocated to Various Elements of Transportation
and Defense System.
Manpower Available for Part-Time, Full-Time Work on
Transportation System.
Organization of Labor Force for Part-Time Work.
Supply Requirements and Productivity of Labor Force that
Could be Tapped for Transportation Work.
- IV. ENEMY DEFENSES
AAA and SAM O.B. by Route Package for Past Year.
Aircraft Attrition Rate, particularly on Armed Recce Missions,
Strike Missions in RP IV, V, VI A, VI B.

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Civilian Supply Requirements in Route Packages I, II, and III
(North Vietnam)

SUMMARY

The 2.5 million civilians located in Route Packages I, II, and III have a requirement for goods that must be brought in from outside -- either imports or goods produced in the north -- on the order of 80 to 100 metric tons per day. The largest item in this requirement is POL -- about 40 metric tons per day. The population is largely rural and despite the disruption of the bombing, probably is nearly self-sufficient in terms of food.

Population

1. Of North Vietnam's total population of 18.5 million (mid-1967), about 2.5 million (13.5 percent) are located in the areas of Route Packages (RP) I, II, and III. This population is largely concentrated in the narrow coastal strip which extends from the heavily populated Red River Delta region to the DMZ. All coastal areas are occupied and population density varies between 10 and 200 per square kilometer. The highest population densities are found in the areas of the small cities of Vinh and Dong Hoi and the area surrounding Mui Ron. All of these densities are low compared to the Red River Delta.

Agriculture

2. Although living standards are low, the rural areas of North Vietnam are very nearly self-sufficient. The southern coastal strip included in RP's I, II, and III exchanges few products with the northern areas of the country, but probably had a small net export of foodstuffs -- primarily fish and rice -- before the bombing and received a small quantity of manufactured goods. Because the bombing has been concentrated in the southern RP's, fishing and agricultural pursuits have been more seriously disrupted there than in areas to the north. As a result, little or no food is shipped out of the area at the present time.

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External Requirements

3. The external requirement of the civilian population of RP's I, II, and III is probably between 80 and 100 tons per day. These requirements consist primarily of FOL and small quantities of other imported supplies such as agricultural tools and equipment, and textiles, clothing, and medicine. Of the total FOL requirement of about 110 metric tons per day for the three route packages, only about 40 tons is consumed in the civilian economy. Little if any food is shipped into the area for civilian consumption. The sharp increase in food imports into North Vietnam during 1966 has probably been used to feed the urban population and military forces.

4. Because of the severity of the bombing in this area, some previous requirements are being forgone. For example, the 70-90 tons per day of coal formerly consumed by the Ban Thuy Thermal Power Plant at Vinh is no longer required and it is assumed that none of the meager quantity of fertilizer previously imported is being shipped into the region at present because of the importance of shipping higher priority goods.